

WHAT IS CLAIMED IS:

1. An isolated nucleic acid which comprises a nucleotide sequence of a polymorphic region of a CADPKL allelic variant, wherein the CADPKL allelic variant has a nucleotide sequence that differs from a reference nucleotide sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:4 and complementary sequences thereof.
2. The isolated nucleic acid of claim 1 wherein the polymorphic region is located in a 5' promoter region.
3. The isolated nucleic acid of claim 1 wherein the polymorphic region is located in an intron.
4. The isolated nucleic acid of claim 1 wherein the polymorphic region is located in an exon.
5. The isolated nucleic acid of claim 1 which comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS:37-42, SEQ ID NOS:77-90, and complementary sequences thereof.
6. A kit for amplifying or determining the molecular structure of at least a portion of a CADPKL nucleic acid, which kit comprises:
  - a probe or primer capable of hybridizing to a polymorphic region of a CADPKL nucleic acid; and
  - instructions for use.

7. The kit of claim 6, wherein the CADPKL nucleic acid is from a human CADPKL gene.

8. The kit of claim 7 wherein the probe or primer is capable of hybridizing to a polymorphic region of a CADPKL allelic variant, which CADPKL allelic variant has a nucleotide sequence that differs from a reference nucleotide sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:4 and complementary sequences thereof.

9. The kit of claim 8 wherein the polymorphic region is located in a 5' promoter region.

10. The kit of claim 8 wherein the polymorphic region is located in a 3' untranslated region.

11. The kit of claim 8 wherein the polymorphic region is located in an intron.

12. The kit of claim 8 wherein the polymorphic region is located in an exon.

13. The kit of claim 8 wherein the polymorphic region comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS:37-42, SEQ ID NOS;77-90, and complementary sequences thereof.

14. The kit of claim 8 wherein the probe or primer is a single stranded nucleic acid.

15. The kit of claim 8 wherein the probe or primer is labeled.

16. The kit of claim 8 wherein the probe or primer has a nucleotide sequence from about 15 to about 30 nucleotides in length.

17. The kit of claim 16 wherein the probe or primer comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS:8-35, SEQ ID NOS:37-42, SEQ ID NOS:51-90, and complementary sequences thereof.

18. A kit according to claim 16 which comprises a first primer and a second primer, wherein the first and second primers are selected from the group consisting of SEQ ID NOS:8-35, SEQ ID NOS:37-42, SEQ ID NOS: 51-90, and complementary sequences thereof.

19. A kit for determining whether a subject is at risk of developing a neuropsychiatric disorder, which kit comprises:

a probe or primer that is capable of hybridizing to a polymorphic region of  
a CADPKL nucleic acid; and  
instructions for use.

20. The kit of claim 19, wherein the neuropsychiatric disorder is schizophrenia, schizoaffective disorder, bipolar disorder, unipolar affective disorder and adolescent conduct disorder.

21. A method for detecting a CADPKL allelic variant, which method comprises contacting a sample CADPKL nucleic acid with a probe or primer complementary to a polymorphic region of a CADPKL allelic variant so that the CADPKL allelic variant is detected in the sample CADPKL nucleic acid.

22. The method of claim 21 wherein the nucleotide sequence of the CADPKL allelic variant differs from a reference nucleotide sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2 and SEQ ID NO:4.

23. The method of claim 21 further comprising determining the identity of the CADPKL allelic variant.

24. A method according to claim 23 which comprises determining the identity of at least one nucleotide of the sample CADPKL nucleic acid.

25. The method of claim 24 wherein the sequence of the polymorphic region of the sample CADPKL nucleic acid is determined.

26. The method of claim 23 wherein the identity of the CADPKL allelic variant is determined by restriction enzyme analysis.

27. The method of claim 23 wherein the identity of the CADPKL allelic variant is determined by single-stranded conformational polymorphism.

28. The method of claim 23 wherein the identity of the CADPKL allelic variant is determined by allelic specific hybridization.

29. The method of claim 21 wherein the identity of the CADPKL allelic variant is determined by primer specific extension.

30. The method of claim 21 wherein the identity of the CADPKL allelic variant is determined by an oligonucleotide ligation assay.

31. The method of claim 21 wherein the CADPKL allelic variant is an allelic variant of a human CADPKL gene.

32. The method of claim 21 wherein the nucleotide sequence of the probe or primer is from about 15 to about 30 nucleotides in length.

33. The method of claim 32 wherein the probe or primer comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS:8-35, SEQ ID NOS:37-42, SEQ ID NOS:51-90, and complementary sequences thereof.

34. A method according to claim 21 which further comprises contacting the sample CADPKL nucleic acid with a second probe or primer, wherein each probe or primer has a nucleotide sequence selected from the group consisting of SEQ ID NOS:8-35, SEQ ID NOS:37-42, SEQ ID NOS:51-90, and complementary sequences thereof.

35. The method of claim 34 which comprises hybridizing the two probes or primers to the sample CADPKL nucleic acid.

36. The method of claim 21 wherein the probe or primer is a single stranded nucleic acid.

37. The method of claim 21 wherein the probe or primer is labeled.

38. A method for determining whether a subject has or is at risk of developing a disease or disorder associated with a specific CADPKL allelic variant, which method comprises identifying, according to the method of claim 21, the CADPKL allelic variant in a nucleic acid sample from the subject.

39. The method of claim 38 wherein the disease or disorder is a neuropsychiatric disorder.

40. The method of claim 39 wherein the neuropsychiatric disorder is selected from the group consisting of schizophrenia, schizoaffective disorder, bipolar disorder, unipolar affective disorder and adolescent conduct disorder.

41. The method of claim 40 wherein the neuropsychiatric disorder is schizophrenia.

42. A method for selecting an appropriate drug for administration to an individual, which method comprises determining the molecular structure of at least a portion of the CADPKL gene of the individual.

43. The method of claim 42 wherein the molecular structure is determined according to a method that comprises determining the identity of an allelic variant of at least one polymorphic region of the CADPKL gene of the individual.

44. A method for treating a subject having a disease or disorder associated with a specific allelic variant of a polymorphic region of a CADPKL gene, which method comprises:

- (a) determining the identity of the allelic variant; and
- (b) administering, to the subject, a compound that compensates for the effect of the specific allelic variant.

45. The method of claim 44 wherein the compound is a CADPKL protein activity inhibitor.

46. The method of claim 44 wherein the polymorphic region is located in an exon.

47. The method of claim 44 wherein the polymorphic region is located in an intron.

48. The method of claim 44 wherein the specific allelic variant is a mutant allele.

49. The method of claim 44 wherein the polymorphic region is located in a promoter region.

50. The method of claim 44 wherein the sequence of the specific allelic variant comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS:8-35, SEQ ID NOS:37-42, SEQ ID NOS:51-90, and complementary sequences thereof.

51. The method of claim 44 wherein the specific allelic variant is associated with a neuropsychiatric disorder.

52. The method of claim 51 wherein the neuropsychiatric disorder is selected from the group consisting of schizophrenia, schizoaffective disorder, bipolar disorder, unipolar affective disorder and adolescent conduct disorder.

53. The method of claim 44 wherein the compound modulates CADPKL protein activity levels.

54. An isolated CADPKL nucleic acid which comprises a microsatellite repeat, and which is amplifiable from a genomic DNA using PCR and any primer pair disclosed in Table 4A.

55. The isolated CADPKL nucleic acid of claim 54, wherein the microsatellite repeat comprises a motif selected from the group consisting of CA, CT, GT, AG, ATTGG, and all complements and permutations of said motif.

56. The isolated CADPKL nucleic acid of claim 54, wherein the microsatellite repeat comprises a repeat motif selected from the group consisting of  $(GT)_n$ ,  $(GT)_{n1}$ ,  $(AG)_{n2}$ ,  $(CT)_n$ ,  $(CA)_n$ ,  $(ATTGG)_n$ , and all complements of said repeat motif.

57. A method for detecting a CADPKL allelic variant, which method comprises contacting a sample CADPKL nucleic acid with a probe or primer complementary to a microsatellite repeat of a CADPKL allelic variant so that the CADPKL allelic variant is detected in the sample CADPKL nucleic acid.

58. A method for determining whether a subject has or is at risk of developing a disease or disorder associated with a specific CADPKL allelic variant, which method comprises identifying, according to the method of claim 57, the CADPKL allelic variant in a nucleic acid sample from the subject.

59. The method of claim 58 wherein the disease or disorder is a neuropsychiatric disorder.

60. The method of claim 59 wherein the neuropsychiatric disorder is selected from the group consisting of schizophrenia, schizoaffective disorder, bipolar disorder, unipolar affective disorder and adolescent conduct disorder.

61. The method of claim 60 wherein the neuropsychiatric disorder is schizophrenia.



62. A kit for amplifying or determining the molecular structure of at least a portion of a CADPKL nucleic acid, which kit comprises:

a probe or primer capable of hybridizing to the isolated nucleic acid of claim

54; and

instructions for use.